

URETHRITIS, ACUTE CYSTITIS, OBSTRUCTION OF THE URETER, HYDRONEPHROSIS, ULCERATION THROUGH THE PERITONEUM, DIAPHRAGM, PLEURA, AND LUNG-TISSUE, AND DISCHARGE OF FLUID THROUGH BRONCHI—RECOVERY.

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The patient, white, male, aged nineteen years, scientific plumber, when two years old began to have periodic attacks of pain, which were presumed to be "stomach-ache" or "colic." The application of clothes wrung out in hot water usually afforded relief in the course of an hour or so. These paroxysms of pain would occur three or four times a year.

After the child had experienced three or four of these attacks his mother began to notice that his side would swell each time these recurred, "like a ridge between the hip and lower ribs." Under these conditions, an hour or so after the use of the hot applications, he would urinate freely, the ridge would disappear, and he would be free from pain.

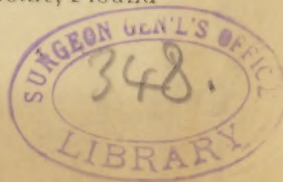
When the patient was six years old he was seen by a homœopathist, who pronounced the trouble "inflammation of the spleen." He was under homœopathic treatment for some time.

After coming to Washington he was brought under the observation of a regular practitioner, who pronounced the trouble "neuralgic pains in consequence of the large vein passing through the kidney becoming congested."

Hot applications, in addition to morphine and camphor internally, were prescribed, which always gave great relief. But the relief was only temporary, and desiring a permanent cure they consulted another physician—this time a homœopathist again. Finally the patient drifted into my care, with such results as are indicated in the following lines:

On November 20th the patient called at my office, and was found to be suffering from an attack of specific urethritis. The usual well-known remedies were administered, and with the usual result. Rest had been particularly urged. Nothing out of the ordinary routine of such cases occurred until the 29th of this same month. On the 29th of November, being summoned to see the patient at his home, I found

presented by the author



him suffering from cystitis and also bronchitis. Simultaneously with the appearance of the cystitis the urethral discharge ceased.

At this time pain in the region of the spleen and along the course of the ureter (left) was complained of, and, in consequence, hot applications were ordered.

The pain persisting, morphine was administered, and the patient subjected to dry-cupping, and this, in turn, followed by blistering. The granular effervescent lithiated potash was administered very freely.

The quantity of urine being passed during this time amounted to one quart in the twenty-four hours.

A microscopical and chemical examination of the urine at this time, by Dr. D. K. Shute, showed the presence of a very large number of leucocytes, triple phosphates, bladder epithelial cells, and granular debris; also the presence of albumen; no tube-casts; no epithelial cells from pelvis of kidney; no sugar.

In consequence of necessity, the patient had not been able to comply with my recommendation as to rest. He was compelled to work at his occupation—scientific plumbing—in a rather damp place, which latter especially induced his bronchitis. The ordinary remedies for bronchial and vesical inflammation were administered, and followed by satisfactory results. The patient was visited daily. On December 10th a slight fusiform enlargement was noticed in the left lumbar and inguinal regions.

The patient was seen daily by me until December 19th. During this time the tumor was continuing to enlarge very much. The mere fusiform shape of the tumor during this time was becoming less and less noticeable, but on the 19th there was present a large bulging tumor extending from the crest of the ilium to the ribs, and from the lumbar around through the left inguinal and the hypogastric regions to the median line, even encroaching, to some extent, upon the right segment of the abdomen. Fluctuation at this period was easily detected. The constitutional symptoms at this time, as throughout the whole period of illness of the patient, were very slight. No chills, no sweats, scarcely any elevation of temperature.

On December 19th Dr. S. C. Busey was called in as con-

sulting physician, when it was decided to use the aspirating needle for purposes of exploration.

The clinical history of the patient revealing the fact that previous enlargements had suddenly disappeared simultaneously with copious discharges of urine, it was decided in consultation to await developments for awhile.

Consequently, on December 20th and 21st, consultations of observation, if I may use such an expression, were held. On the 22d the parts had become so much distended that, after consultation with Drs. S. C. Busey and D. K. Shute, aspiration was deemed imperative.

Even at this time there was scarcely any constitutional disturbance. The patient being anaesthetized I introduced one of Dieulafoy's large-sized aspirating needles (after a preliminary incision had been made through the integument and fasciæ) midway between the umbilicus and the anterior superior spine of the ilium, carrying the point of the needle obliquely upward, outward and backward. The needle penetrated the sac of the tumor with great difficulty, in consequence of its great toughness and unyielding nature. One gallon of bloody fluid was withdrawn, which, when subjected to examination by chemical analysis and the microscope, revealed the following characters: A trace of albumen; alkaline reaction; sp. gr. 1.020; a large number of blood-corpuscles; a few spindle-shaped epithelial cells, etc. Unfortunately no examination was made to detect the presence or absence of urea.

On December 22d, prior to the aspiration, the urine was normal in color. That voided after the operation was bloody-looking—resembling very much the fluid drawn by aspiration. This latter fact inspired the hope that, probably, the obstruction being removed, the sac would not refill, and this hope was still further strengthened, inasmuch as there was no apparent increase in the size of the sac, and the amount of urine now being voided amounted to three pints (one pint in excess of what it was previous to the operation). These favorable conditions obtained for four days. During all this time, again, there were no constitutional symptoms. On the fourth day, however, there was a very perceptible refilling of the sac. The amount of urine passed this time amounted to over one quart—still bloody.

On December 26th, after consultation with Drs. S. C. Busey, D. W. Bliss, and D. K. Shute, it was decided again to aspirate the patient. Local anæsthesia, by means of cocaine, being very satisfactorily induced, the sac was again aspirated, and one gallon of bloody fluid removed, resembling that previously withdrawn, but being much richer in blood corpuscles, as revealed by the examination made by Dr. Shute. After the tapping a large compress was applied over the sac, and retained in position by Martin's elastic bandage, with the hope that they would aid the expulsion of the fluid and prevent its reaccumulation.

On December 27th consultations were held, and the patient found in excellent condition. On the 28th there was no consultation. On the 29th a consultation was held. No reaccumulation of fluid apparent. Patient in excellent condition.

On January 1, 1888, the fluid was evidently accumulating again, presenting a swelling about the size of an orange, which gradually increased until January 5th, when it reached the dimensions of a small cocoa-nut and remained stationary until January 12th. No pain or fever during this time. Scarcely any soreness in the region of the "tapping" or of the spleen.

On January 11th I saw the patient about six o'clock in the evening, and found him suffering with symptoms of acute indigestion—flatus causing dyspnœa, palpitation of the heart, and a pronounced hacking cough, which were greatly relieved for a time by the application of turpentine stupes and the administration of stomachics.

The symptoms continued to some extent until 12 p. m., when the cough became very violent and was accompanied by the sudden expectoration of about half a pint of frothy, bloody fluid, very similar in appearance to the fluid that had been drawn by aspiration previously, as indicated by microscopic examination. Simultaneously with this expectoration was the complete disappearance of the cocoa-nut swelling and the unpleasant symptoms, such as dyspnœa, etc. The patient, to use his own expression, "thought he had coughed the lump up;" no pain during all this time.

On January 12th I saw the patient, in consultation with Drs. Busey, Bliss, and Shute. We found him in a comfortable condition; temperature, 99° F.; pulse, 100; no pain

Physical exploration revealed absolute flatness over the entire lower lobe of the left lung and half of the upper lobe. Entire absence of vesicular murmur. No bronchial breathing. A very large number of moist râles were audible in the upper lobe.

The first urine voided after these occurrences was now found to be perfectly clear, and the quantity voided in the twenty-four hours became very large, averaging more than half a gallon, and was normal in appearance.

The fluid expectorated was subjected to chemical and microscopical examination, and found to be like that drawn from the sac by aspiration in all essential respects. A fact of special interest to note is that this fluid was slightly alkaline in reaction.

On January 13th the expectoration continued, still bloody, though much diminished, and the constitutional symptoms continued to be insignificant. The lung gradually cleared up from above downward. There were a large number of moist râles throughout the whole lung.

January 14th.—Gradual improvement; less cough and sputa; less blood in the sputa; lungs were clearing up very rapidly.

January 16th.—Improvement very marked. Lungs entirely clear except at a very small portion of the lower part of the lobe.

January 19th.—Consultation for "scientific inquiry." Lung entirely normal.

January 22d.—Patient called at my office. He had been out riding for one hour in a cab.

January 25th.—Patient went to a ball and danced several hours.

March 7th.—Slight irritation about the neck of the bladder. Passed a slight concretion of uric-acid crystals. Lithiates were administered.

March 10th.—Patient entirely well.

April 12th.—Left for Denver, Col., to reside.

In commenting upon the clinical history of this case, the first inference that necessarily thrusts itself upon my mind is that there must certainly be a congenital constriction of the left ureter, low down toward the bladder.

The frequent attacks of pain and swelling in childhood,

which were, upon the use of hot and counter-irritant applications, relieved, with the simultaneous discharge of large amounts of urine, point, in my judgment, quite surely to this conclusion.

The constriction must have been of such a nature that ordinary "colds," by inducing internal congestion, must have so engorged the mucous membrane of this left ureter as to cause complete occlusion of this small channel of exit for the urine.

In explanation of the tremendous enlargement present in the patient during this last attack, we have the two potent factors—cold, causing congestion, and therefore great swelling of the mucous membrane of the ureter in the neighborhood of the constriction, and, probably a more efficient cause, extension of the inflammation to the congenitally weak point, in consequence of the acute cystitis.

The simultaneous occurrence of these two factors produced such intense inflammatory swelling that the procedure which had been formerly so successful now utterly failed; so that the three influences—continued excretion of the urine (to be referred to shortly), complete obstruction of the channel of exit, and thirdly, both of these conditions obtaining for several days—all conjoined to bring about the tremendous enlargement present at the time of aspiration.

It will be noticed from the clinical history that the color of the urine previous to the operation was normal where, after the operation, the urine became bloody—very much resembling the aspirated fluid. How is this to be accounted for? I think as follows:

The inflammatory swelling of the ureter in the neighborhood of the constriction had very much subsided at the time of the operation, so that, as far as this factor was concerned, the urine (bloody) in the dilated ureter (dilated above the point of constriction, of course) was capable of flowing onward into the bladder; but, prior to this subsidence, the bloody urine had accumulated to so great an extent in the dilated ureter that now the element of mechanical pressure was superadded as an obstructing cause.

Of course, when the mechanical pressure was relieved by aspiration the bloody urine from the left ureter was allowed to flow down into the bladder and discolor the clear urine

in the vesical organ which had been coming from the right (and healthy) ureter.

A very interesting fact to be noted from the clinical history of this case is that, previous to the aspiration on December 22d, the patient had been passing two pints of clear urine and after the aspiration three pints of bloody urine, which suggestive fact seems to indicate that the left kidney was not only not destroyed by pressure, but, on the contrary, was performing its function quite effectively. Moreover, since one gallon of fluid was withdrawn by the second aspiration, which occurred four days after the first one, the kidney was secreting daily one quart of urine.

Another interesting fact to account for is the presence of blood in the aspirated fluid as well as in the urine after the operation. Evidently, again, the clinical history furnishes a very satisfactory explanation.

On the night of January 11th the patient, after a paroxysm of violent coughing, expectorated a considerable amount of bloody fluid, closely resembling that drawn by aspiration—there occurring at the same time a complete disappearance of the swelling in the side. Evidently an ulcerative process had been going on for some time in the sac as well as through the diaphragm and related structures, in consequence of pressure, which ultimately permitted the contents of the dilated ureter to break through the diaphragm into the lungs. This ulceration was the source of the blood which discolored the urine in the diseased ureter.

Now what explains the fact, noted in the clinical history, that after this occurrence on the night of January 11th, the first urine voided was perfectly clear? It must be this: Simultaneously with the progress of the ulcerative process there occurred localized adhesive peritonitis as well as pleuritis, which prevented the pouring of the contents of the sac into the cavity of the peritoneum or that of the pleura. When the sac ruptured the ulcerated portion was carried by the force of the escaping fluid a sufficient distance into the perforation to subject it to considerable pressure. This pressure was sufficient to control the flow of blood from the open blood-vessels into the fluid contents of the sac; consequently there was no more blood to discolor the urine in the dilated ureter or in the bladder; the bloody

expectoration, which continued for a few days, with slight coughing, being accounted for by the ulcerated tissue.

Probably the most interesting fact to observe in the clinical history of this patient is the entire absence of pneumonia after the contents of the dilated ureter had broken into the lung. We know that normal urine is a most irritating fluid. In extravasation of urine from any cause, the most violent inflammation is excited in parts reached by this fluid. It is this fluid that prevents successful plastic operations upon the penis where the mucous membrane of the urethra is involved, etc. Why is it, then, that the urine in this left diseased and dilated ureter did not excite inflammation in the delicate tissue of the lungs? We confidently expected pneumonia of a violent type to occur. How could we do otherwise *à priori*? But neither pneumonia nor any other inflammatory condition arose.

I think the following is the explanation:

It is a well-known fact that all the nutritive processes of the body take place in alkaline fluid. The tissues of the lungs are constantly bathed in alkaline fluid—the plasma of the blood—a fluid which is bland, soothing, and life-sustaining. We have already noted that there was hemorrhage into the contents of the dilated ureter. This hemorrhage was quite profuse, entirely sufficient to impart to the urine a pronounced alkaline reaction. Therefore the fluid that came in contact with the delicate lung-tissue was not the acrid, irritating, acid, normal urine, that does so much harm, but urine that had become perfectly harmless and soothing by being made alkaline in consequence of the large amount of blood contained in it.

I have already stated that the ulcerated portion of the sac was forced into the opening in the diaphragm, and subjected to pressure by which further hemorrhage was prevented. It was by this same means that any of the after-forming acid urine was prevented getting in contact with the lung-tissue.

Very plainly, the clinical history of this case will exclude the presence of pyonephrosis or pyelitis, and just as plainly points to hydronephrosis. Moreover, it indicates a case of hydronephrosis the pathological conditions of which are of long standing, and one in which, strange to say, the kidney had not been destroyed by long-continued (though intermittent) pressure.